

번호 03-4

제 목	국문	직업적 요인, 생활습관요인 및 유전자 다형성이 요증 1-1-hydroxypyrene 및 2-naphthol 농도에 미치는 영향			
	영문	Effects of occupation, life style, and genetic polymorphisms of CYP1A1, CYP2E1, GSTM1 and GSTT1 on urinary 1-hydroxypyrene and 2-naphthol concentrations			
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분 야	보건관리 ( ) 역학 ( ) 환경 (0)	발 표 자	일반회원 (0) 진공의 ( )	발표 형식	구 연 (0) 포스터 ( )
진행 상황	연구완료(0), 연구중( ) → 완료 예정 시기				
1. Objectives  This study was undertaken to determine the effects of occupation, life style, and the genetic polymorphisms of cytochrome P450 1A1 (CYP1A1), cytochrome P450 2E1 (CYP2E1), and glutathione S-transferases mu 1 (GSTM1) and theta 1 (GSTT1), on the concentrations of urinary 1-hydroxypyrene (1-OHP) and 2-naphthol among Korean coke oven workers and university students.					

## 2. Methods

The study subjects included 90 coke oven workers and 128 university students. A questionnaire was used to obtain detailed data about the work area, smoking habits, and food intake of subjects. Associations between urinary polycyclic aromatic hydrocarbon (PAH) concentrations and occupation, smoking status, total airborne PAH amount and genetic polymorphisms were tested.

## 3. Results

Urinary 1-OHP and 2-naphthol concentrations were higher in coke oven workers than in students, and correlated significantly with work area. Urinary 2-naphthol concentrations increased with an increase in the level of cigarette smoking in students. Total airborne PAH amount correlated with urinary 1-OHP concentration in coke oven workers. Urinary 1-OHP and 2-naphthol concentrations were higher in coke oven workers with the c1/c2 or c2/c2 genotype of CYP2E1, than in those with the c1/c1 genotype. Urinary 2-naphthol concentrations were higher in GSTM1-null workers than in GSTM1-positive workers. In multiple regression analysis, CYP2E1 was a significant factor determining urinary 1-OHP concentrations in coke oven workers. CYP2E1 and GSTM1 were significant determinants for urinary 2-naphthol concentrations in coke oven workers, and GSTM1 and smoking were prognosticators among university students.

## 4. Conclusion

Urinary 1-OHP is a better indicator of occupational exposure to PAH in coke oven workers than 2-naphthol, whereas urinary 2-naphthol may be more sensitive for non-occupational inhalation exposure to PAH. In occupationally exposed populations, CYP2E1 and GSTM1 appear to play an important role in the metabolism of pyrene and naphthalene. In individuals not occupationally exposed to PAHs, GSTM1 and smoking